

The Claims

1. A force adjusting mechanism for an orthodontic appliance located in association with a patient's dental arch and including spring means for applying force to one or more of the patient's teeth, the force adjusting mechanism comprising:

- a) a shaft operatively coupled at opposite ends between a first portion of the appliance which is anchored in the patient's dental arch and a second portion of the appliance including the spring means which applies force to one or more of the patient's teeth;
- b) a lock movable along the shaft to compress the spring between the lock and the second portion of the appliance; and
- c) co-operating structures on the shaft and on the lock to provide a unidirectional ratchet movement of the lock along the shaft;
- d) so that the lock may be advanced one step at a time in one direction only to compress the spring to apply force in a stepwise manner to one or more of the patient's teeth.

2. The force adjusting mechanism according to claim 1, wherein the co-operating structures comprise a series of successive detent formations along an outer surface of the shaft and a component on the lock movable into and out of the detent formations on the shaft.

3. The force adjusting mechanism according to claim 1, wherein the lock has a formation thereon for engagement

by a manually operated instrument for moving the lock along the shaft.

4. The force adjusting mechanism according to claim 2, wherein the detent formations are defined by an axial series of substantially frusto-conical formations each having a ramp-like surface and providing a series of axially spaced-shoulders.

5. The force adjusting mechanism according to claim 4, wherein the lock component comprises one or more generally axially extending fingers which flex inwardly to be received with a corresponding shoulder and to ride along a corresponding ramp-like surface during the unidirectional ratchet movement of the lock along the shaft.

6. A kit for providing a force adjusting mechanism for an orthodontic appliance which applies spring force to one or more of a patient's teeth, the kit comprising:

- a) a shaft having opposite ends for operative coupling between first and second portions of the appliance and a section between the ends having a series of successive detent formations therealong; and
- b) a lock movable along the shaft section and having a component movable into and out of the detent formations as the lock moves along the shaft section to provide a unidirectional ratchet movement of the lock along the shaft section;
- c) so that the lock may be advanced manually one step at a time in one direction only to

compress a spring to apply force in a stepwise manner to one or more of a patient's teeth.

5       7.    A kit according to claim 6, further including a manually operated instrument having a formation thereon for engaging the lock to effect movement to the lock along the shaft section.

8.    A kit according to claim 6, further including one or more springs for placement on the shaft to be compressed by the lock.

10   9.    A method for adjusting force applied by an orthodontic appliance located in association with a patient's dental arch and including spring means for applying force to one or more of the patient's teeth, the method comprising:

15       a)   providing in the appliance a force adjusting mechanism comprising a shaft operatively coupled at opposite ends between a first portion of the appliance which is anchored in the patient's dental arch and a second portion of the appliance including the spring means which applies force to one or more of the patient's teeth and a lock movable along the shaft to compress the spring means between the lock and the second portion of the appliance, there being co-operating structures on the shaft and on the lock to provide a unidirectional ratchet movement of the lock along the shaft; and

20       b)   manually advancing the lock one step at a time in one direction only to compress the spring

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to apply force in a stepwise manner to one or more of the patient's teeth.

10. The force adjusting mechanism according to claim 8,  
wherein the step of manually advancing the lock is  
5 performed by a manually operated instrument engaging the  
lock.